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PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * * * *

NEWS	1		Web Page URLs for STN Seminar Schedule - N. America
NEWS	2		"Ask CAS" for self-help around the clock
NEWS	3	JAN 27	Source of Registration (SR) information in REGISTRY updated and searchable
NEWS	4	JAN 27	A new search aid, the Company Name Thesaurus, available in CA/CAplus
NEWS	5	FEB 05	German (DE) application and patent publication number format changes
NEWS	6	MAR 03	MEDLINE and LMEDLINE reloaded
NEWS	7	MAR 03	MEDLINE file segment of TOXCENTER reloaded
NEWS	8	MAR 03	FRANCEPAT now available on STN
NEWS	9	MAR 29	Pharmaceutical Substances (PS) now available on STN
NEWS	10	MAR 29	WPIFV now available on STN
NEWS	11	MAR 29	New monthly current-awareness alert (SDI) frequency in RAPRA
NEWS	12	APR 26	PROMT: New display field available
NEWS	13	APR 26	IFIPAT/IFIUDB/IFICDB: New super search and display field available
NEWS	14	APR 26	LITALERT now available on STN
NEWS	15	APR 27	NLDB: New search and display fields available
NEWS	16	May 10	PROUSDDR now available on STN
NEWS	17	May 19	PROUSDDR: One FREE connect hour, per account, in both May and June 2004
NEWS	18	May 12	EXTEND option available in structure searching
NEWS	19	May 12	Polymer links for the POLYLINK command completed in REGISTRY
NEWS	20	May 17	FRFULL now available on STN
NEWS	21	May 27	STN User Update to be held June 7 and June 8 at the SLA 2004 Conference
NEWS	22	May 27	New UPM (Update Code Maximum) field for more efficient patent SDIs in CAplus
NEWS	23	May 27	CAplus super roles and document types searchable in REGISTRY
NEWS	24	May 27	Explore APOLLIT with free connect time in June 2004

NEWS EXPRESS	MARCH 31 CURRENT WINDOWS VERSION IS V7.00A, CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP), AND CURRENT DISCOVER FILE IS DATED 26 APRIL 2004
NEWS HOURS	STN Operating Hours Plus Help Desk Availability
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NEWS LOGIN	Welcome Banner and News Items
NEWS PHONE	Direct Dial and Telecommunication Network Access to STN
NEWS WWW	CAS World Wide Web Site (general information)

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10/528,090

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  * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * * * *

FILE 'HOME' ENTERED AT 17:50:33 ON 16 JUN 2004

=> file reg
COST IN U.S. DOLLARS                                    SINCE FILE      TOTAL
                                                           ENTRY    SESSION
FULL ESTIMATED COST                                         0.21       0.21

FILE 'REGISTRY' ENTERED AT 17:50:42 ON 16 JUN 2004
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STRUCTURE FILE UPDATES:   15 JUN 2004  HIGHEST RN 693773-36-3
DICTIONARY FILE UPDATES:  15 JUN 2004  HIGHEST RN 693773-36-3

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> ....Testing the current file.... screen

ENTER SCREEN EXPRESSION OR (END):end


=>
Uploading C:\STNEXP4\QUERIES\50331988.str

L1      STRUCTURE UPLOADED

=> que L1

L2   QUE L1

=> d l1
L1 HAS NO ANSWERS
L1              STR
/ Structure 1 in file .gra /


Structure attributes must be viewed using STN Express query preparation.


=> s l1 sss sam
SAMPLE SEARCH INITIATED 17:51:01 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -     51 TO ITERATE

100.0% PROCESSED      51 ITERATIONS                                6 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
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                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          592 TO     1448
PROJECTED ANSWERS:               6 TO      266

L3            6 SEA SSS SAM L1

=> d scan

L3   6 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   1,2,4-Benzotriazine, 3-amino-7-methyl-, 2-oxide (8CI)
MF   C8 H8 N4 O


/ Structure 2 in file .gra /


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):5

L3   6 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   1,2,4-Benzotriazin-3-amine, 5-methoxy- (9CI)
MF   C8 H8 N4 O


/ Structure 3 in file .gra /


**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


L3   6 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   1,2,4-Benzotriazin-3-amine, 8-fluoro-, 1-oxide (9CI)
MF   C7 H5 F N4 O

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L3   6 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   1,2,4-Benzotriazin-3-amine, 8-(trifluoromethyl)-, 1,4-dioxide (9CI)
MF   C8 H5 F3 N4 O2

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L3   6 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   Acetamide, N-[2-[(3-amino-1-oxido-1,2,4-benzotriazin-7-yl)oxy]ethyl]-2,2,2-
     trifluoro- (9CI)
MF   C11 H10 F3 N5 O3

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

L3   6 ANSWERS   REGISTRY  COPYRIGHT 2004 ACS on STN
IN   1,2,4-Benzotriazin-3-amine, 7-methoxy-, 1-oxide (9CI)
MF   C8 H8 N4 O2

*** STRUCTURE DIAGRAM IS NOT AVAILABLE ***

**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**


ALL ANSWERS HAVE BEEN SCANNED
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=> s l1 sss ful
FULL SEARCH INITIATED 17:51:25 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -    889 TO ITERATE

100.0% PROCESSED     889 ITERATIONS                          159 ANSWERS
SEARCH TIME: 00.00.01

L4          159 SEA SSS FUL L1

=> file caplus
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                       ENTRY    SESSION
FULL ESTIMATED COST                                   155.42     155.63

FILE 'CAPLUS' ENTERED AT 17:51:33 ON 16 JUN 2004
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FILE COVERS 1907 - 16 Jun 2004  VOL 140 ISS 25
FILE LAST UPDATED: 15 Jun 2004  (20040615/ED)

  This file contains CAS Registry Numbers for easy and accurate
  substance identification.


=> s l4/prep
          358 L4
      3159827 PREP/RL
L5          45 L4/PREP
                (L4 (L) PREP/RL)

=> d l5 1-45 bib abs

L5   ANSWER 1 OF 45  CAPLUS  COPYRIGHT 2004 ACS on STN
AN   2004:333939  CAPLUS
DN   140:339343
TI   Cyclocondensation method for synthesizing 3-amino-1,2,4-benzotriazines
     from guanidine salts and nitrobenzenes in the presence of a base
IN   Moskalev, Nikolai V.; Gribble, Gordon W.
PA   Trustees of Dartmouth College, USA
SO   PCT Int. Appl., 10 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 1
     PATENT NO.        KIND  DATE           APPLICATION NO.  DATE
     ---------------   ----  --------       ---------------  --------
PI   WO 2004034023      A2   20040422       WO 2003-US31988  20031008
         W:  CA, JP, US
         RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,
             IT, LU, MC, NL, PT, RO, SE, SI, SK, TR
```

PRAI US 2002-417569P P 20021010
OS CASREACT 140:339343; MARPAT 140:339343
AB 3-Amino-1,2,4-benzotriazines (e.g., 3-amino-1,2,4-benzotriazine; m.p. 203-205°; 72% yield) are prepared in high yield and selectivity by the cyclocondensation reaction of guanidine salts (e.g., guanidine hydrochloride) with nitrobenzenes (e.g., nitrobenzene) in the presence of a base (e.g., potassium tert-butoxide). The method is carried out at a moderate reaction temperature without producing halide wastes derived from nucleophilic substitution and acid byproducts.

L5 ANSWER 2 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:308364 CAPLUS
DN 140:321386
TI Preparation of vasculostatic agents and methods of use
IN Wrasidlo, Wolfgang; Doukas, John; Royston, Ivor; Noronha, Glenn; Hood, John D.; Dneprovskaia, Elena; Gong, Xianchang; Splittgerber, Ute; Zhao, Ningning
PA Targegen, Inc., USA
SO PCT Int. Appl., 230 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004030635	A2	20040415	WO 2003-US31721	20031003

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2002-415981P P 20021003
US 2003-440234P P 20030114
US 2003-443752P P 20030129
US 2003-463818P P 20030417
US 2003-466983P P 20030430
US 2003-479295P P 20030617
OS MARPAT 140:321386
GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Compds. (2 Markush structures shown as I and II; others are described in the claims and disclosure; variables defined below; e.g. III and IV) and methods are provided for treating disorders associated with compromised vasculostasis. Invention methods and compns. are useful for treating a variety of disorders including for example, stroke, myocardial infarction, cancer, ischemia/reperfusion injury, autoimmune diseases such as rheumatoid arthritis, eye diseases such as retinopathies or macular degeneration or other vitreoretinal diseases, inflammatory diseases, vascular leakage syndrome, edema, transplant rejection, adult/acute respiratory distress syndrome (ARDS), and the like. Although the methods of preparation are not claimed, many example prepns. are included. For example, III was prepared (75 %) from 2-(2-aminophenyl)indole and

4-hydroxyphenylacetic acid. Various expts. are described that show the use of the claimed compds. along with chemotherapeutic agents for cancer treatment. The claimed compds. also show inhibition of vascular leak induced by interleukin 2. Inhibition of VEGF-induced edema, reduction of myocardial infarction and inhibition of c-Src and Yes kinases were demonstrated for some of the claimed compds. For I: each R0 = -H, -COOH, -OR', -SO3H, wherein R' is - H or lower alkyl, or when x = 2, each R0 is taken together to form a 1,3-dioxolyl ring, or each R0 = (un)substituted alkyl, (un)substituted alkenyl, (un)substituted alkynyl, (un)substituted cycloalkyl, (un)substituted heterocyclic, (un)substituted aryl, (un)substituted heteroaryl, (un)substituted alkylaryl, (un)substituted arylalkyl, (un)substituted arylalkenyl, (un)substituted arylalkynyl, halogen, amino, amido, nitro, or thioalkyl. R1 and R2 = H, (un)substituted alkyl, (un)substituted alkenyl, (un)substituted alkynyl, (un)substituted cycloalkyl, (un)substituted heterocyclic, (un)substituted aryl, (un)substituted heteroaryl, (un)substituted alkylaryl, (un)substituted arylalkyl, (un)substituted arylalkenyl, (un)substituted arylalkynyl; G is NH, O, S, or (CR'')p, wherein R'' is -H, lower alkyl, or acetamido, and wherein p = 0-3; Ar is aryl or heteroaryl, and x and y = 1-4. For II: Z1-Z6 = C, -C:O, N, or NRa, wherein Ra is -H, (un)substituted alkyl, wherein said substituents are halogen, hydroxy, oxo, or amino; each X = halogen, -ORb, -NRb2, or -SRb, wherein Rb is -H lower alkyl, -(CH2)2NHEt, -(CH2)3morpholin-1-yl, -(CH2)3-(N-methylpiperazin-1-yl), aryl, heteroaryl, -(NH-NH-Rc), -(N:N-NH-Rc), wherein Rc is H or lower alkyl. Each Y = -ORd, -NRd2, -SRd, or -OPO3H2 wherein Rd is H, lower alkyl, aryl, heteroaryl, -(CH2)2NHEt, -(CH2)3morpholin-1-yl, or (CH2)3-(N-methylpiperazin-1-yl); or each Y = (un)substituted alkyl, (un)substituted aryl, (un)substituted heteroaryl, or halogen, wherein said substituents = halogen, -ORe, -NRe2, -SRe, -P(O)(OH)2, wherein Re is -H, lower alkyl, aryl, or heteroaryl; or each Y = CH2glycinyl, CH2NHethoxy, CH2NHCH2alkyl, CH2NHCH2t-Bu, CH2NHCH2aryl, CH2NHCH2substituted aryl, CH2NHCH2heteroaryl, CH2NHCH2substituted heteroaryl; or when n is 2, each Y is taken together to form a fused aromatic or heteroarom. ring system; and m and n = 1 to 4, wherein when Z1, Z3, Z5, and Z6 are each N, X is NH2, and m = n = 2, Y is not Ph or 4-hydroxyphenyl.

L5 ANSWER 3 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2004:267314 CAPLUS
DN 140:303706
TI Preparation of DNA-targeted benzotriazine 1,4-dioxides and related analogs as hypoxia-selective drugs and radiosensitizers in cancer therapy
IN Brown, Martin J.; Denny, William Alexander; Hay, Michael Patrick; Hicks, Kevin Owen; Gamage, Swarnalatha Akuratiya; Pruijin, Frederik Bastiaan; Wilson, William Robert
PA Auckland Uniservices Limited, N. Z.; The Board of Trustees of the Leland Stanford Junior University
SO PCT Int. Appl., 144 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2004026846	A1	20040401	WO 2003-NZ210	20030917

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,

CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG
PRAI NZ 2002-521436 A 20020917
GI

/ Structure 4 in file .gra /

AB Title compds. I [wherein Y1, Y2 = independently H, halo, OH and derivs., NO2, NH2 and derivs., SH and derivs., CF3, CN, CO2H and derivs., CHO and derivs., CONH2 and derivs., etc.; X = NH, NMe, CH2, SO, SO2, O; A = alkyl, optionally substituted with OH and derivs., NH2, NHR3, NR32, N(OH)R3; R3 = independently OH, NO2, NH2, CF3, CN, CO2H, SH, alkenyl, (un)substituted alkyl optionally interrupted or extended by one or more heteroatoms, etc.; D = DNA-targeting unit defined as any moiety of mol. weight < 700 DAltons, that has an association constant for binding to double-stranded random-sequence DNA of > 10-3 M-1 at an ionic strength of 0.01 M at 20°, and selected from (un)substituted 4-pyridinyl, 8- or 8-quinolinyl, 2-(4-pyridinyl)-8-quinolinyl, 2-phenyl-4-benzimidazolyl, 4-acridinyl, 1-phenazinyl, etc.; and their pharmacol. acceptable salts] were prepared as hypoxia-selective drugs and radiosensitizers for cancer therapy, both alone or in combination with radiation and/or other anticancer drugs. For example, II was prepared by alkylation of 6-[(tert-Butyloxycarbonyl)amino]hexylamine (preparation given) with 3-Chloro-1,2,4-benzotriazine 1-oxide (preparation given) oxidation with MCPBA in DCM to 1,4-dioxide, deprotection and amino-de-methoxylation of 9-methoxyacridine with the terminal amino intermediate. I were evaluated for their cytotoxicity in a clonogenic and in a proliferation assay under aerobic and hypoxic conditions. In both tests, I showed large increases in the cytotoxicity compared to Tirapazamine (TPZ), while retaining selective killing under hypoxic conditions. In a clonogenic assay using murine SCCVII cell lines, selected I showed increased hypoxic cytotoxicity (3.9-56.3-fold) compared to TPZ and mostly modest hypoxic cytotoxicity ratio (6.3-63.6), with some excellent (>187 and 400) values.
RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 4 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:584978 CAPLUS
DN 140:93593
TI A mass spectrometry study of tirapazamine and its metabolites insights into the mechanism of metabolic transformations and the characterization of reaction intermediates
AU Zagorevskii, Dmitri; Song, Minghu; Breneman, Curt; Yuan, Yang; Fuchs, Tarra; Gates, Kent S.; Greenlief, C. Michael
CS Department of Chemistry, Rensselaer Polytechnic Institute, Troy, NY, USA
SO Journal of the American Society for Mass Spectrometry (2003), 14(8), 881-892
CODEN: JAMSEF; ISSN: 1044-0305
PB Elsevier Science Inc.
DT Journal
LA English
AB Tandem mass spectrometry methods were used to study the sites of protonation and for identification of 3-amino-1,2,4-benzotriazine 1,4-dioxide (1, tirapazamine), and its metabolites 3-amino-1,2,4-benzotriazine 1-oxide (3), 3-amino-1,2,4-benzotriazine 4-oxide (4), 3-amino-1,2,4-benzotriazine (5), and a related isomer 3-amino-1,2,4-benzotriazine 2-oxide (6). Fragmentation pathways of 3 and 5 indicated the 4-N-atom as the most likely site of protonation. Among the N-oxides studied, the 4-oxide (4) showed the highest degree of protonation at the oxygen atom. The differences in collision-induced dissociation of isomeric

protonated 1-, 2- and 4-oxides allowed for their identification by LC/MS/MS. Gas phase and liquid phase protonation of tirapazamine occurred exclusively at the oxygen in the 4-position. A loss of OH radical from these ions (2+) resulted in ionized 3. Neutralization-reionization mass spectrometry (NR MS) expts. demonstrated the stability of the neutral analog of protonated tirapazamine in the gas phase in the μs time-frame. A significant portion of the neutral tirapazamine radicals (2) dissociated by loss of hydroxyl radical during the NR MS event, which indicates that previously proposed mechanisms for redox-activated DNA damage are reasonable. The activation energy for loss of hydroxyl radical from activated tirapazamine (2) was estimated to be .apprx.14 kcal mol-1. Stable neutral analogs of [3 + H]+ and [5 + H]+ ions were also generated in the course of NR MS expts. Structures of these radicals were assigned to the mols. having an extra hydrogen atom at one of the ring N-atoms. Quantum chemical calcns. of protonated 1, 3, 4 and 5 and the corresponding neutrals were performed to assist in the interpretation of exptl. results and to help identify their structures.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 5 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2003:396867 CAPLUS
DN 138:401760
TI High-yield process for the industrial-scale manufacture of 3-amino-1,2,4-benzotriazine dioxide (tirapazamine) from benzofuroxan and cyanamide in the presence of an organic base in a nonaqueous medium followed by treatment with an organic acid
IN Burgos, Alain A.
PA Sanofi-Synthelabo, Fr.
SO PCT Int. Appl., 11 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI WO 2003042192	A1	20030522	WO 2002-EP13202	20021108

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRAI US 2001-338139P P 20011113
OS CASREACT 138:401760
AB A high-yield process for the manufacture of 3-amino-1,2,4-benzotriazine dioxide (tirapazamine) from benzofuroxan and cyanamide in the presence of an organic base (e.g., DBU) in a nonaq. medium (e.g., acetonitrile) at 20-25°, followed by treatment with an organic acid (e.g., acetic acid), is described. This process obviates the need to use aqueous base, DMSO, and methanesulfonic acid, all of which are undesirable for an industrial-scale process.

RE.CNT 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 6 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:962167 CAPLUS
DN 138:136826
TI Activation of 3-Amino-1,2,4-benzotriazine 1,4-Dioxide Antitumor Agents to

Oxidizing Species Following Their One-Electron Reduction
AU Anderson, Robert F.; Shinde, Sujata S.; Hay, Michael P.; Gamage, Swarna A.; Denny, William A.
CS Departments of Chemistry and Auckland Cancer Society Research Centre, University of Auckland, Auckland, 92019, N. Z.
SO Journal of the American Chemical Society (2003), 125(3), 748-756
CODEN: JACSAT; ISSN: 0002-7863
PB American Chemical Society
DT Journal
LA English
OS CASREACT 138:136826
AB The mechanism by which a benzotriazine 1,4-dioxide class of anticancer drugs produce oxidizing radicals following their one-electron reduction has been investigated using tirapazamine (3-amino-1,2,4-benzotriazine 1,4-dioxide, 1) and its 6-methoxy (6), 7-dimethylamino (7), and 8-Me (8) analogs. By measuring the changes in absorption with pH, we found that the radical anions undergo protonation with radical pKr values of 6.19 ± 0.05, 6.10 ± 0.03, 6.45 ± 0.04, and 6.60 ± 0.04, resp. The one-electron reduced species underwent a first-order reaction, with increased rate consts. from 112 ± 23 s-1 for 1 to 777 ± 12 s-1(6), 1120 ± 29 s-1 (7), and 825 ± 89 s-1 (8) at pH 7. No overall change in conductance was observed following the one-electron reduction of 6, and 8 at pH 4.5, consistent with the protonation of the radical anions, but a loss in conductance was seen for one-electron reduced 7 because of further protonation of the initially formed radical. This is assigned to the protonation of the dimethylamino group of the radical species, which has a pKa of 8.8 ± 0.3. All conductance changes take place on a time-scale shorter than those of the above first-order reactions, which are not associated with the formation or loss of charged species. The absorption spectra present at the end of the unimol. reactions were found to be similar to those formed immediately upon the one-electron oxidation of the resp. substituted 3-amino-1,2,4-benzotriazine 1-oxides, and it is suggested that common benzotriazinyl radicals are formed by both routes. All these intermediate radicals underwent dismutation to produce final spectra matched by equal contributions of the parent compound and their resp. substituted 3-amino-1,2,4-benzotriazine 1-oxides. By establishing redox equilibrium between the intermediate radicals formed on the one-electron oxidation of the resp. 3-amino-1,2,4-benzotriazine 1-oxides of the compds. and reference compds., we found the one-electron reduction potential of the oxidizing radicals to range from 0.94 to 1.31 V. The benzotriazinyl radical of tirapazamine was found to oxidize dGMP and 2-deoxyribose with rate consts. of (1.4 ± 0.2) + 108 M-1 s-1 and (3.7 ± 0.5) + 106 M-1 s-1, resp.
RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 7 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:924949 CAPLUS
DN 138:304247
TI New and versatile syntheses of 3-alkyl- and 3-aryl-1,2,4-benzotriazine 1,4-dioxides: preparation of the bioreductive cytotoxins SR 4895 and SR 4941
AU Hay, Michael P.; Denny, William A.
CS Faculty of Medical and Health Sciences, Auckland Cancer Society Research Centre, The University of Auckland, Auckland, 92019, N. Z.
SO Tetrahedron Letters (2002), 43(52), 9569-9571
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 138:304247
AB Palladium-mediated coupling of 3-chloro-1,2,4-benzotriazine 1-oxide with a variety of stannanes in the presence of Pd(PPh3)4 gives 3-alkyl derivs. in

good yields. Suzuki reaction of the 3-chloro compound with phenylboronic acids gives 3-aryl-1,2,4-benzotriazine 1-oxides. Oxidation of 1-oxides with trifluoroperacetic acid gives the 1,4-dioxides. This method provides a better route to the potential anti-cancer agents SR 4895 and SR 4941.
RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 8 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:917641 CAPLUS
DN 138:130592
TI Structure-Activity Relationships of 1,2,4-Benzotriazine 1,4-Dioxides as Hypoxia-Selective Analogues of Tirapazamine
AU Hay, Michael P.; Gamage, Swarna A.; Kovacs, Mary S.; Pruijn, Frederik B.; Anderson, Robert F.; Patterson, Adam V.; Wilson, William R.; Brown, J. Martin; Denny, William A.
CS Auckland Cancer Society Research Centre, Faculty of Medical and Health Sciences, University of Auckland, Auckland, 92019, N. Z.
SO Journal of Medicinal Chemistry (2003), 46(1), 169-182
CODEN: JMCMAR; ISSN: 0022-2623
PB American Chemical Society
DT Journal
LA English
OS CASREACT 138:130592
AB Tirapazamine (TPZ, 1,2,4-benzotriazin-3-amine 1,4-dioxide) is a bioreductive hypoxic cytotoxin currently in Phase II/III clin. trials in combination with radiotherapy and with cisplatin-based chemotherapy. As part of a program to develop TPZ analogs with improved solubility/potency and therapeutic indexes, we synthesized 34 1,2,4-benzotriazin-3-amine 1,4-dioxides (BTO) to examine structure-activity relationships (SAR) for ring substitution. The electronic, hydrophobic, and steric parameters of substituents at the 5-, 6-, 7-, and 8-positions were systematically varied, and the aqueous solubility and one-electron reduction potentials [E(1)] of the analogs were determined For each compound, we determined cell killing of mouse SCCVII tumor cells in vitro under aerobic and hypoxic conditions by clonogenic survival and determined their relative hypoxic toxicity (RHT; relative to TPZ) and hypoxic cytotoxicity ratio (HCR). A subset of compds. was independently evaluated using a 96-well SRB proliferation assay, the data from which correlated well with that derived by the clonogenic endpoint. Most substituents, except 5- and 8-dimethylamino and 8-diethylamino, gave analogs less soluble than TPZ. E(1) values ranged from -240 mV through -670 mV (with TPZ having a value of -456 mV) and correlated well with the electronic parameter σ for substituents at the 5-, 6-, 7-, and 8-positions. Aerobic cytotoxic potency showed a strong pos. correlation with E(1) (i.e., electron-withdrawing substituents increased aerobic toxicity). Hypoxic cytotoxicity also generally increased with increasing E(1), with a maximum (RHT up to 3.9-fold) seen in halo- and trifluoromethyl-substituted BTO derivs. having E(1) between ca. -370 to -400 mV. Analogs with high HCRs (>50) all had E(1)s in the range -450 to -510 mV (weakly electron-donating substituents) with the exception of the 8-CF3 analog, which had an HCR of 112 against SCCVII despite a high E(1) of -372 mV). The results suggest that ring-A substituents in BTO analogs can be used to predictably vary one-electron reduction potentials and also provide a much better definition than previously of the optimum range of these reduction potentials for a desirable biol. activity profile (high HCR, RHT, and solubility).
RE.CNT 47 THERE ARE 47 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 9 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2002:303250 CAPLUS
DN 138:49470

TI Design, synthesis and biological activities of antiangiogenic hypoxic cytotoxin, triazine-N-oxide derivatives
AU Nagasawa, Hideko; Yamashita, Mao; Mikamo, Naoko; Shimamura, Mariko; Oka, Shigenori; Uto, Yoshihiro; Hori, Hitoshi
CS Faculty of Engineering, Department of Biological Science and Technology, The University of Tokushima, Tokushima, 770-8506, Japan
SO Comparative Biochemistry and Physiology, Part A: Molecular & Integrative Physiology (2002), 132A(1), 33-40
CODEN: CBPAB5; ISSN: 1095-6433
PB Elsevier Science Inc.
DT Journal
LA English
AB For cancer therapy, hypoxia represents an important tumor specific target. Therefore we designed and synthesized antiangiogenic hypoxic cytotoxins as 'hypoxia modifiers'. They can be activated bioreductively in hypoxic cells to kill the oxygen-deficient tumor cells selectively and prevent their re-growth. The aromatic heterocycle di-N-oxides, tirapazamine (TPZ), TX-1102, and TX-402 inhibited growth of EMT6/KU cells, SAS/neo cells, and SAS/Trp248 cells (mutant p53 gene transformant) under hypoxic condition. They also induced apoptosis selectively at a dose of 10 μM each under hypoxic condition for 5 h. Their hypoxic cytotoxicities and apoptosis inducing activities were p53-independent because the activities in SAS/neo cells were almost similar to that in SAS/Trp248 cells. In angiogenesis inhibition assay using chick embryo chorioallantoic membrane (CAM), TPZ, TX-1102, TX-402 and TX-1033 showed 40, 25, 60 and 60% inhibition of angiogenesis each at a dose of 10 μg/CAM. The nitrosopyrimidine, TX-1041 had neither antiangiogenic activity nor cytotoxicity. Therefore the di-N-oxide group is thought to be required for the biol. activities. TX-1102 was a potent antiangiogenic hypoxic cytotoxin inducing apoptosis p53-independently.
RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 10 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:888478 CAPLUS
DN 134:162997
TI Synthesis of 5-alkoxy-3-amino-7-nitro-1,2,4-benzotriazine 1-oxides from 1,3,5-trinitrobenzene
AU Rozhkov, V. V.; Shevelev, S. A.
CS N. D. Zelinsky Inst. Org. Chem., Russian Acad. Sci., Moscow, 117913, Russia
SO Russian Chemical Bulletin (Translation of Izvestiya Akademii Nauk, Seriya Khimicheskaya) (2000), 49(9), 1640-1641
CODEN: RCBUEY; ISSN: 1066-5285
PB Consultants Bureau
DT Journal
LA English
OS CASREACT 134:162997
AB 1-Alkoxy-3,5-dinitrobenzenes were nitrated to give 1-alkoxy-2,3,54-trinitrobenzenes. The reaction of the latter with guanidine affords N-(2-alkoxy-4,6-dinitrophenyl)guanidines, which undergo cyclization under the action of KOH to form 5-alkoxy-3-amino-7-nitro-1,2,4-benzotriazine 1-oxides.
RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 11 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 2000:858975 CAPLUS
DN 134:157171
TI 3-Amino-1,2,4-benzotriazine 4-Oxide: Characterization of a New Metabolite Arising from Bioreductive Processing of the Antitumor Agent 3-Amino-1,2,4-benzotriazine 1,4-Dioxide (Tirapazamine)
AU Fuchs, Tarra; Chowdhury, Goutam; Barnes, Charles L.; Gates, Kent S.

CS Departments of Chemistry and Biochemistry, University of Missouri-Columbia, Columbia, MO, 65211, USA
SO Journal of Organic Chemistry (2001), 66(1), 107-114
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
AB Tirapazamine is a promising antitumor agent that selectively causes DNA damage in hypoxic tumor cells, following one-electron bioreductive activation. Surprisingly, after more than 10 yr of study, the products arising from bioreductive metabolism of tirapazamine have not been completely characterized. The two previously characterized metabolites are 3-amino-1,2,4-benzotriazine 1-oxide (I) and 3-amino-1,2,4-benzotriazine (II). In this work, 3-amino-1,2,4-benzotriazine 4-oxide (III) is identified for the first time as a product resulting from one-electron activation of the antitumor agent tirapazamine by the enzymes xanthine/xanthine oxidase and NADPH:cytochrome P 450 oxidoreductase. As part of this work, the novel N-oxide III was unambiguously synthesized and characterized using NMR spectroscopy, UV-vis spectroscopy, LC/MS, and x-ray crystallog. Under conditions where the parent drug tirapazamine is enzymically activated, the metabolite III is produced but readily undergoes further reduction to the benzotriazine II. Thus, under circumstances where extensive reductive metabolism occurs, the yield of the 4-oxide III decreases. In contrast, the isomeric two-electron reduction product 3-amino-1,2,4-benzotriazine 1-oxide I does not readily undergo enzymic reduction and, therefore, is found as a major bioreductive metabolite under all conditions. Finally, the ability of the 4-oxide metabolite III to participate in tirapazamine-mediated DNA damage is considered.
RE.CNT 39 THERE ARE 39 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L5 ANSWER 12 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1998:176290 CAPLUS
DN 128:275077
TI Anti-Helicobacter agents containing N-containing heterocyclic compounds generating active radicals
IN Ito, Fumio; Nakao, Masafumi
PA Takeda Chemical Industries, Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 12 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 10072350	A2	19980317	JP 1996-231740	19960902
PRAI	JP 1996-231740		19960902		

OS MARPAT 128:275077
AB The title antibacterial agents are useful for treatment of gastric ulcer, duodenal ulcer, and gastritis. 3-Amino-1,2,4-benzotriazine 1,4-dioxide had MIC of 0.1 μg/mL against H. pylori NCTC 11637.

L5 ANSWER 13 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:599397 CAPLUS
DN 127:293194
TI A convenient synthesis of 3-amino-1,2,4-benzotriazine 1,4-dioxide (SR 4233) and related compounds via nucleophilic aromatic substitution between nitro arenes and guanidine base
AU Suzuki, Hitomi; Kawakami, Takehiko
CS Graduate School Science, Kyoto University, Kyoto, 606, Japan
SO Synthesis (1997), (8), 855-857
CODEN: SYNTBF; ISSN: 0039-7881
PB Thieme

DT Journal
LA English
OS CASREACT 127:293194
AB Reaction of 2-FC6H4NO2 or C6H4-1,2-(NO2)2 with guanidine in hot THF followed by treatment with KOCMe3 gave 3-amino-1,2,4-benzotriazine 1-oxide in good yield, which was further oxidized by AcOOH to afford the title compound

L5 ANSWER 14 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1997:491630 CAPLUS
DN 127:121759
TI Preparation of 3-amino-1,2,4-benzotriazine dioxide.
IN Philion, Richard E.
PA Sanofi, Fr.; Philion, Richard E.
SO PCT Int. Appl., 19 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9720828	A1	19970612	WO 1996-US18761	19961121
	W: AU, BR, CA, CN, CZ, HU, JP, KR, MX, NO, NZ, RU, SG, US				
	RW: AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	US 5672702	A	19970930	US 1995-566979	19951204
	CA 2238092	AA	19970612	CA 1996-2238092	19961121
	AU 9710588	A1	19970627	AU 1997-10588	19961121
	AU 721627	B2	20000713		
	EP 865435	A1	19980923	EP 1996-941445	19961121
	EP 865435	B1	20020213		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	CN 1207736	A	19990210	CN 1996-199754	19961121
	CN 1068595	B	20010718		
	BR 9611864	A	19990518	BR 1996-11864	19961121
	JP 2000501705	T2	20000215	JP 1997-521313	19961121
	RU 2178413	C2	20020120	RU 1998-112135	19961121
	AT 213234	E	20020215	AT 1996-941445	19961121
	PT 865435	T	20020731	PT 1996-941445	19961121
	ES 2172696	T3	20021001	ES 1996-941445	19961121
	CZ 292732	B6	20031217	CZ 1998-1723	19961121
	NO 9802315	A	19980520	NO 1998-2315	19980520
	HK 1017358	A1	20011123	HK 1999-102591	19990616
PRAI	US 1995-566979	A	19951204		
	WO 1996-US18761	W	19961121		

AB 3-Amino-1,2,4-benzotriazine 1,4-dioxide (I) was prepared by (1) adding a 1:3 molar ratio of benzofurazan-1 oxide in Me2SO to in H2O at 55-65° under homogeneous conditions to obtain 3-amino-1,2,4-benzotriazine 1,4-dioxide as a precipitate, (2) removing the precipitate and suspending it in excess H2O, (3) adding about 3.5 mol equivalent MeSO3H, (4) filtering the resulting solution, (5) adding the filtered solution to a buffered solution containing excess NaOAc and allowing crystallization to occur, (6) filtering and washing the crystals with H2O, (7) adding the crystals back to the reaction vessel and stirring with about 5 vols. of H2O, and (8) filtering the crystals and rinsing with acetone. I yields were 60-69% with 91.8-98.5% purity.

L5 ANSWER 15 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:731781 CAPLUS
DN 123:102774
TI Method of tumor treatment using a 1,2,4-benzotriazine oxide compound to enhance the cytotoxicity of a chemotherapeutic agent, and preparation of

10/528,090

1,2,4-benzotriazine oxide compounds
IN Brown, J. Martin
PA Board of Trustees of the Leland Stanford Junior University, USA
SO Can. Pat. Appl., 48 pp.
CODEN: CPXXEB
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	CA 2132578	AA	19950323	CA 1994-2132578	19940921
	CA 2132578	C	19981013		
	US 5484612	A	19960116	US 1993-125609	19930922
	EP 649658	A1	19950426	EP 1994-202693	19940919
	EP 649658	B1	20000614		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	EP 972517	A2	20000119	EP 1999-118533	19940919
	EP 972517	A3	20000126		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE				
	AT 193827	E	20000615	AT 1994-202693	19940919
	ES 2147567	T3	20000916	ES 1994-202693	19940919
	PT 649658	T	20001229	PT 1994-202693	19940919
	AU 9474117	A1	19950406	AU 1994-74117	19940921
	AU 690132	B2	19980423		
	NO 9403524	A	19950323	NO 1994-3524	19940922
	JP 07215882	A2	19950815	JP 1994-227568	19940922
	HU 71119	A2	19951128	HU 1994-2726	19940922
	RU 2148406	C1	20000510	RU 1994-34104	19940922
	SK 282178	B6	20011106	SK 1994-1148	19940922
	CZ 289742	B6	20020313	CZ 1994-2326	19940922
	US 5670502	A	19970923	US 1995-448705	19950524
	US 6121263	A	20000919	US 1997-852616	19970507
	US 6277835	B1	20010821	US 2000-558786	20000426
	GR 3034360	T3	20001229	GR 2000-402048	20000906
PRAI	US 1993-125609	A	19930922		
	EP 1994-202693	A3	19940919		
	US 1995-448705	A1	19950524		
	US 1997-852616	A3	19970507		

OS MARPAT 123:102774
GI

/ Structure 5 in file .gra /

AB Pharmaceutical compns. are disclosed for increasing toxicity of chemotherapy agents for treating mammalian cancer tumors, preferably solid tumors, comprising an effective amount of a 1,2,4-benzotriazine oxide compound I [X = H, (substituted) hydrocarbyl, halo, OH, alkoxy; (substituted) amino; n = 0, 1; and Y1, Y2 = H, nitro, halo, (substituted) hydrocarbyl, etc.] or pharmacol. acceptable salts thereof. Also disclosed are kits for treatment of such tumors which comprise a chemotherapy agent and a cytotoxicity-enhancing amount of a 1,2,4-benzotriazine oxide compound I. Preparation of I is included. Tirapazamine and cisplatin were tested in an in vivo RIF-1 tumor model.

L5 ANSWER 16 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1995:420792 CAPLUS
DN 122:207740
TI Preparation of substituted fused heterocyclic herbicides.
IN Selby, Thomas P.
PA E. I. Du Pont de Nemours & Co., USA
SO U.S., 33 pp. Cont.-in-part of U.S. 5,110,347.

CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5389600	A	19950214	US 1993-50475	19930521
	US 5110347	A	19920505	US 1990-617707	19901126
	WO 9209578	A1	19920611	WO 1991-US8266	19911114
	W: AU, CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	US 5491126	A	19960213	US 1994-325720	19941019
PRAI	US 1990-617707		19901126		
	WO 1991-US8266		19911114		
	US 1993-50475		19930521		

OS MARPAT 122:207740
GI

/ Structure 6 in file .gra /

AB The title compds. I (X=N,CH;Y=N,CH8;,Q,Z=N,CR4,CR5;R=alkyl, alkenyl, alkoxyalkyl, etc.;R1=H,F,Cl,Me;R2=H, halo, alkyl etc.;R3=H, halo, alkyl, alkenyl, alkynyl, haloalkyl, OR6,SOnR7,etc.;R4,R8=H,CN,alkyl, alkoxy, halo;R5=haloalkyl, halocycloalkyl, etc.; R6=alkyl, alkenyl, alkynyl, etc.;R7=alkyl, haloalkyl;n=0,1,2) are prepared as herbicides. Thus, 7-methyl-3-(2,2,2-trifluoroethoxy)-5-[3-(2,2,2-trifluoromethyl)phenyl]-1,2,4-benzotriazine (preparation given), applied postemergence at 2 kg/ha, totally controlled lambsquarters (Chenopodium album).

L5 ANSWER 17 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:534159 CAPLUS
DN 121:134159
TI Preparation of benzotriazines as phospholipase A2 inhibitors
IN Friebe, Walter Gunar; Scheuer, Werner; Tibes, Ulrich Prof
PA Boehringer Mannheim GmbH, Germany
SO Ger. Offen., 10 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 4244009	A1	19940630	DE 1992-4244009	19921224
	WO 9414781	A1	19940707	WO 1993-EP3542	19931215
	W: AU, BG, BR, CA, CZ, FI, HU, JP, KR, NO, NZ, PL, RO, RU, SK, UA, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
	CA 2152614	AA	19940707	CA 1993-2152614	19931215
	AU 9456998	A1	19940719	AU 1994-56998	19931215
	EP 675881	A1	19951011	EP 1994-902771	19931215
	EP 675881	B1	19970319		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	AT 150457	E	19970415	AT 1994-902771	19931215
	ES 2102191	T3	19970716	ES 1994-902771	19931215
	US 5856325	A	19990105	US 1995-464631	19950626
PRAI	DE 1992-4244009		19921224		
	WO 1993-EP3542		19931215		

OS MARPAT 121:134159
GI

/ Structure 7 in file .gra /

AB Title compds. [I; R1 = OH or NH2; R1,R3 = H, halo, OH, cyano, (halo)alkyl, alkoxy, CO2H, etc.; n = 0 or 1] were prepared as phospholipase A2 inhibitors (no data). Thus, 2-(O2N)C6H4NH2 was cyclocondensed with NCNH2 to give I (R1 = NH2, R2 = R3 = H; n = 1).

L5 ANSWER 18 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1994:106638 CAPLUS
DN 120:106638
TI The synthesis of a potential anti-cancer agent containing the caffeine and 1,2,3-benzotriazine moieties
AU Parrick, John; Mehta, Lina K.; Hodgkiss, Richard J.
CS Dep. Chem., Brunel Univ., Uxbridge/Middlesex, UB8 3PH, UK
SO Journal of Heterocyclic Chemistry (1993), 30(2), 323-7
CODEN: JHTCAD; ISSN: 0022-152X
DT Journal
LA English
OS CASREACT 120:106638
GI

/ Structure 8 in file .gra /

AB The potential anti-cancer agent I has been synthesized from 4-(4-chlorobutoxy)-2-nitroaniline via benzotriazine N-oxide II. Theophylline has been reacted with II to give the N-oxide, which was oxidized to I. I has been found to be ineffective as a radiosensitizer.

L5 ANSWER 19 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1993:511203 CAPLUS
DN 119:111203
TI Discovery and optimization of a PSI electron-accepting 1,2,4-benzotriazine herbicide
AU Henrie, Robert N., II; Plummer, Marjorie J.; Smith, Sandra E.; Yeager, Walter H.; Witkowski, Debra A.
CS Agric. Chem. Group, FMC Corp., Princeton, NJ, 08543, USA
SO Quantitative Structure-Activity Relationships (1993), 12(1), 27-37
CODEN: QSARDI; ISSN: 0931-8771
DT Journal
LA English
AB A random source PSI electron-accepting herbicide lead, Et 1,2,4-benzotriazine-3-acetate (I), was optimized using mol. probing, bioisosteric replacement, Free-Wilson anal., Sequential Simplex Optimization, and ultimately linear regression anal. Some variables in the initial regression equations were found to be cross correlated, representing the same factors as revealed by factor anal. The technique of prefiltering potential variables for linear regression anal. utilizing factor anal. is exemplified. For the set of I analogs, 11 independent factors were identified which were then submitted to linear regression anal. The resulting equations are statistically more secure, all terms being independent. These equations are discussed in the context of known SAR for herbicidal PSI electron acceptors, especially the bipyridiniums.

L5 ANSWER 20 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:442745 CAPLUS
DN 117:42745
TI Preparation of quinoxaline and benzotriazine derivatives as herbicides
IN Selby, Thomas
PA du Pont de Nemours, E. I., and Co., USA

10/528,090

SO U.S., 25 pp.
CODEN: USXXAM
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5110347	A	19920505	US 1990-617707	19901126
	CA 2095637	AA	19920527	CA 1991-2095637	19911104
	WO 9209578	A1	19920611	WO 1991-US8266	19911114
	W: AU, CA, JP, US				
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, NL, SE				
	AU 9213576	A1	19920625	AU 1992-13576	19911114
	EP 559843	A1	19930915	EP 1992-905664	19911114
	EP 559843	B1	19940914		
	R: DE, ES, FR, GB, IT				
	JP 06503093	T2	19940407	JP 1992-505662	19911114
	US 5389600	A	19950214	US 1993-50475	19930521
	US 5491126	A	19960213	US 1994-325720	19941019
PRAI	US 1990-617707		19901126		
	WO 1991-US8266		19911114		
	US 1993-50475		19930521		

OS MARPAT 117:42745
GI

/ Structure 9 in file .gra /

AB The title compds. I (R = CF3, CN; Y = N, CH; Z = N, CH, CCF3, etc.; Q = CH, COMe, COCHF2, etc.; n = 0, 1) are prepared as herbicides. A mixture of 5-bromo-7-methyl-3-(2,2,2-trifluoroethoxy)-1,2,4-benzotriazine 1-oxide (preparation given), 3-(trifluoromethyl)phenyltrimethylstannane (preparation given), and tetrakis(triphenylphosphine)palladium(0) was refluxed to give I (R = CF3, Y = Z = N, Q = COCH2CF3, n = 1) (II) and I (R = CF3, Y = Z = N, Q = COCH2CF3, n = 0). Pre-emergence, 400 g II/ha totally controlled blackgrass (Alopecurus myosuroides), chickweed (Stellaria media), lambsquarters (Chenopodium album) and other weeds, with no damage to soybean.

L5 ANSWER 21 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1992:151727 CAPLUS
DN 116:151727
TI Formation of 3-amino-1,2,4-triazines by thermolysis of condensed N-amino-α-azidoimidazoles
AU Pozharskii, A. F.; Nanavyan, I. M.; Kuz'menko, V. V.
CS Rostov State Univ., Rostov-on-Don, 344711, USSR
SO Mendeleev Communications (1992), (1), 33-5
CODEN: MENCEX; ISSN: 0959-9436
DT Journal
LA English
OS CASREACT 116:151727
GI For diagram(s), see printed CA Issue.
AB Thermolysis of 1-amino-2-azidoazoles I [A = 1,2-disubstituted benzene, 5,6- and 6,5-disubstituted 1,3-dimethyl-2,4(1H,3H)-pyrimidinedione] in PhCl results in loss of a mol. of nitrogen and finally gives 3-amino derivs. of 1,2,4-benzotriazine, isofervenulin, and fervenulin (II; A = same) in good yields. The reaction is thought to proceed through the recyclization of intermediate C-nitrenes III.

L5 ANSWER 22 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1991:471656 CAPLUS
DN 115:71656
TI Preparation of 1,2,4-benzotriazine oxides as radiosensitizers and selective cytotoxic agents
IN Lee, William W.; Brown, J. Martin; Grange, Edward W.; Martinez, Abelardo P.; Tracy, Michael; Pollart, Daniel J.
PA SRI International, USA
SO PCT Int. Appl., 85 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9104028	A1	19910404	WO 1989-US4112	19890918
	W: AT, AU, BB, BG, BR, CH, DE, DK, FI, GB, HU, JP, KP, KR, LK, LU, MC, MG, MW, NL, NO, RO, SD, SE, SU				
	RW: AT, BE, BF, BJ, CF, CG, CH, CM, DE, FR, GA, GB, IT, LU, ML, MR, NL, SE, SN, TD, TG				
	AU 8944284	A1	19910418	AU 1989-44284	19890918
	AU 646794	B2	19940310		
	EP 478545	A1	19920408	EP 1989-911346	19890918
	EP 478545	B1	19990811		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	HU 60629	A2	19921028	HU 1992-873	19890918
	JP 05500499	T2	19930204	JP 1989-510665	19890918
	JP 3034541	B2	20000417		
	AT 183094	E	19990815	AT 1989-911346	19890918
	NO 9200747	A	19920225	NO 1992-747	19920225
PRAI	WO 1989-US4112	A	19890918		

OS MARPAT 115:71656
GI

/ Structure 10 in file .gra /

AB Title compds. [I; X = (acyl)amino; H, OH, halo, alkoxy, (substituted) hydrocarbyl; Y1,Y2 = H, NO2, halo, (substituted) (cyclic) (unsatd.) hydrocarbyl, morpholino, pyrrolidino, piperidino, (acyl)amino, O2CR, O2SR, OP(OR)R; R = (substituted) hydrocarbyl n = 0, 1], were prepared for selectively killing hypoxic tumor cells. Thus, 3-chloro-1,2,4-benzotriazine 1-oxide was stirred 20 h with Et2N(CH2)3NH2 in CH2Cl2 to give 87% aminotriazine, which in CHCl3 containing (F3CCO)2O at -10° was treated with 70% H2O2 followed by stirring for 20 days at room temperature to give 29% title compound II. II showed 3 times the hypoxic cytotoxicity of 3-amino-1,2,4-benzotriazine 1,4-dioxide toward HA-1 cells.

L5 ANSWER 23 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1990:158276 CAPLUS
DN 112:158276
TI Preparation of 1,2,4-benzotriazine oxides as radiosensitizers and selective cytotoxic agents
IN Lee, William W.; Brown, J. Martin; Grange, Edward W.; Martinez, Abelardo P.; Tracy, Michael
PA SRI International, USA
SO PCT Int. Appl., 51 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE

PI	WO 8908647	A1	19890921	WO 1989-US1037	19890315
	W: AU, DK, JP, KR, NO				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	CA 1339217	A1	19970805	CA 1989-593060	19890308
	AU 8934337	A1	19891005	AU 1989-34337	19890315
	AU 637572	B2	19930603		
	EP 413706	A1	19910227	EP 1989-904704	19890315
	EP 413706	B1	19980902		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	JP 03505867	T2	19911219	JP 1989-504293	19890315
	JP 2793312	B2	19980903		
	AT 170515	E	19980915	AT 1989-904704	19890315
	ES 2013123	A6	19900416	ES 1989-991	19890317
	US 5175287	A	19921229	US 1989-409480	19890918
	CA 2001903	AA	19910430	CA 1989-2001903	19891031
	CA 2001903	C	20030408		
	KR 140894	B1	19980601	KR 1989-702141	19891117
	NO 9004003	A	19900913	NO 1990-4003	19900913
	NO 179005	B	19960409		
	NO 179005	C	19960717		
	DK 9002230	A	19901115	DK 1990-2230	19900917
	US 5616584	A	19970401	US 1995-378420	19950126
	US 5624925	A	19970429	US 1995-378419	19950126
	US 5849738	A	19981215	US 1995-453329	19950530
	US 6362184	B1	20020326	US 1997-951873	19971017
	US 2002103200	A1	20020801	US 2001-22678	20011217
PRAI	US 1988-169873	A	19880318		
	US 1986-911906	B2	19860925		
	WO 1989-US1037	A	19890315		
	US 1989-356602	B2	19890524		
	US 1989-409480	A3	19890918		
	US 1992-939787	B3	19921027		
	US 1995-378420	A3	19950126		
	US 1995-453329	A3	19950530		
	US 1997-951873	A3	19971017		
OS	MARPAT 112:158276				
GI					

/ Structure 11 in file .gra /

AB Title compds. I [X = H, C1-4 hydrocarbyl, NH2, RNH, R2N, R = C1-4 alkyl, amide, (un)substituted morpholino; Y1, Y2 = H, halo, (un)substituted C1-4 hydrocarbyl (including cyclic and unsatd.), optionally interrupted by O; Y1Y2 = R1NH, R1O2C, R1O2S, R1(R1OP)O; R1 = (un)substituted hydrocarbyl; n = 0, 1] were prepared I (X, Y1, Y2 = H; n = 0), AcOH, and 30% H2O2 was treated with Na2WO4.2H2O to give I (X = HO; n = 1; Y3, Y2 unchanged). I in vivo, in combination with radiation gave an enhanced cell killing compared to radiation only.

L5 ANSWER 24 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:172458 CAPLUS
DN 110:172458
TI 4-Substituted 2-nitrophenylguanidines. III. Kinetic study of the cyclization
AU Pazdera, P.; Pichler, J.; Potacek, M.
CS Fac. Nat. Sci., J. F. Purkyne Univ., Brno, CS-611 37, Czech.
SO Chemical Papers (1988), 42(4), 547-58
CODEN: CHPAEG; ISSN: 0366-6352
DT Journal
LA English

AB The dependence of the rates of cyclization of (4-X-2-nitrophenyl)guanidines to 3-amino-7-X-1,2,4-benzotriazine 1-oxides on pH and substituent X was studied. The cyclization was an irreversible reaction. The rate constant was a linear function of the hydroxide ion concentration The rate consts. were correlated with Hammett σm consts. The dependence of the reaction rate on the guanidine concentration and on the temperature of reaction was investigated for the derivative with X = OMe. The reaction was first order with respect to substrate. The energy of activation and the frequency factor were calculated from the dependence of the reaction rate on temperature and from the Arrhenius equation. The entropy and the enthalpy of activation were calculated from the Eyring equation.

L5 ANSWER 25 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:135201 CAPLUS
DN 110:135201
TI (4-Substituted 2-nitrophenyl)guanidines. I. Synthesis and cyclization of (4-substituted 2-nitrophenyl)guanidines
AU Pazdera, P.; Potacek, M.
CS Fac. Nat. Sci., J. E. Purkyne Univ., Brno, CS-611 37, Czech.
SO Chemical Papers (1988), 42(4), 527-37
CODEN: CHPAEG; ISSN: 0366-6352
DT Journal
LA English
OS CASREACT 110:135201
GI

/ Structure 12 in file .gra /

AB Title compds. I (R = H, Br, Cl, Me, MeO, PhO, O2N, cyano) were prepared by either acid-catalyzed addition of 4,2-R(O2N)C6H3NH2 to H2NCN or by nucleophilic substitution of 2,4-(O2N)2C6H3Cl and 4,3-Cl(O2N)C6H3CN with guanidine. The products were isolated and identified as nitrates. Under basic catalysis the nitrates cyclized to 1,2,4-benzotriazine 1-oxides II.

L5 ANSWER 26 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1989:75573 CAPLUS
DN 110:75573
TI Preparation of 1,2,4-benzotriazine oxides as radiosensitizers and selective cytotoxic agents
IN Lee, William W.; Brown, J. Martin; Grange, Edward W.; Martinez Abelardo, P.
PA SRI International, USA
SO PCT Int. Appl., 49 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8802366	A1	19880407	WO 1987-US1412	19870616
	W: DE, GB, JP				
	DE 3790581	T	19880825	DE 1987-3790581	19870616
	JP 01500826	T2	19890323	JP 1987-504083	19870616
	CA 1338445	A1	19960709	CA 1987-540932	19870630
	GB 2203151	A1	19881012	GB 1988-10634	19880505
	GB 2203151	B2	19910529		
	US 5175287	A	19921229	US 1989-409480	19890918
	US 5616584	A	19970401	US 1995-378420	19950126
	US 5624925	A	19970429	US 1995-378419	19950126
	US 5849738	A	19981215	US 1995-453329	19950530
	US 6362184	B1	20020326	US 1997-951873	19971017

	US 2002103200	A1	20020801	US 2001-22678	20011217
PRAI	US 1986-911906	A	19860925		
	WO 1987-US1412	W	19870616		
	US 1988-169873	B1	19880318		
	US 1989-356602	B2	19890524		
	US 1989-409480	A3	19890918		
	US 1992-939787	B3	19921027		
	US 1995-378420	A3	19950126		
	US 1995-453329	A3	19950530		
	US 1997-951873	A3	19971017		

OS MARPAT 110:75573
GI

/ Structure 13 in file .gra /

AB The title compds. [I; X = OH, OR, NH2, NHR, NR2; R = (un)substituted C1-4 alkyl, morpholino; Y1, Y2 = H, halo, (un)substituted hydrocarbyl, NHR1, R1CO2, R1CONH, R1SO2, etc.; R1 = (un)substituted hydrocarbyl; n = 0, 1] were prepared H2NC(:NH)NH2·HCl was stirred 1 h with NaOEt in EtOH whereupon 4,3-Cl(O2N)C6H3CF3 was added and the mixture refluxed 5 h to give title compound II. I (X = NH2, Y1 = Y2 = H, n = 1), at 0.3 mmol/kg injected into tumor-implanted mice both before and after irradiation, showed enhanced cell killing compared to radiation only.

L5 ANSWER 27 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:549487 CAPLUS
DN 109:149487
TI New synthetic tricks. [Et3NH][Sn(SPh)3] and Bu2SnH2, two useful reagents for the reduction of azides to amines
AU Bartra, Marti; Urpi, Felix; Vilarrasa, Jaume
CS Fac. Quim., Univ. Barcelona(III), Barcelona, 08028, Spain
SO Tetrahedron Letters (1987), 28(47), 5941-4
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 109:149487
GI

/ Structure 14 in file .gra /

AB Et3NHSn(SPh)3 or Bu2SnH2-catalyzed reduction of azides gave 60-100% yields of amines. Thus, the treatment of sugar-derived azide I (R = N3) with Et3NHSn(SPh)3 gave 96% I (R = NH2).

L5 ANSWER 28 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:150499 CAPLUS
DN 108:150499
TI Preparation of phenoxy-substituted nitrogen heterocycles as herbicides
IN Munro, David; Bit, Rino Antonio
PA Shell Internationale Research Maatschappij B. V., Neth.
SO Brit. UK Pat. Appl., 31 pp.
CODEN: BAXXDU
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	GB 2189238	A1	19871021	GB 1986-9155	19860415
PRAI	GB 1986-9155		19860415		

OS CASREACT 108:150499
GI

/ Structure 15 in file .gra /

AB The title compds. [I; B = H, halo; A1 = B, alkyl, haloalkyl; A2, A3 = A1, NO2, cyano; X = CR1; Y = CR2; Z = CR3; R1, R2 = H, (substituted) alkyl, cycloalkyl, alkenyl, aryl, aralkyl, cyano, COR4, CO2R4; R3 = H, (substituted) alkyl, alkenyl, cycloalkyl, aryl, aralkyl; R4 = (substituted) alkyl, alkenyl, cycloalkyl, aryl, aralkyl; or X = CR5; Y = N; Z = CR6; R5, R6 = R3; or R5 = H, (substituted) alkyl; R6 = halo, cyano, (substituted) alkoxy, alkylthio, alkylcarbonyl, alkoxycarbonyl, amino; X = Z = N and Y = CR11 where R11 = (substituted amino); etc.] were prepared as herbicides. 4-(2'-Chloro-4'-trifluoromethylphenoxy)-2-acetylaniline and di-Me acetylenedicarboxylate were refluxed 24 h in C6H6 to give 2,3-dimethoxycarbonyl-4-methyl-6-(2'-chloro-4'-trifluoromethylphenoxy)quinoline. At 5 kg/ha pre- or postemergent, several I gave complete control of barnyardgrass.

L5 ANSWER 29 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1988:56124 CAPLUS
DN 108:56124
TI Preparation of 3-dimethylamino-7-methyl-1,2,4-benzotriazine-1-oxide as an intermediate for azapropazone
IN Walker, Francis S.; Benn, Frederick Roger
PA A. H. Robins Co., Inc., UK
SO PCT Int. Appl., 30 pp.
CODEN: PIXXD2
DT Patent
LA English
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8704433	A1	19870730	WO 1987-GB57	19870128
	W: DK, FI, JP, NO, US				
	RW: AT, BE, CH, DE, FR, GB, IT, LU, NL, SE				
	GB 2188627	A1	19871007	GB 1987-862	19870115
	GB 2188627	B2	19900314		
	EP 259371	A1	19880316	EP 1987-901068	19870128
	EP 259371	B1	19920513		
	R: AT, BE, CH, DE, FR, GB, IT, LI, LU, NL, SE				
	AT 76071	E	19920515	AT 1987-901068	19870128
PRAI	GB 1986-2035		19860128		
	GB 1986-2037		19860128		
	GB 1987-862		19870115		
	EP 1987-901068		19870128		
	WO 1987-GB57		19870128		

OS CASREACT 108:56124
GI

/ Structure 16 in file .gra /

AB Azapropazone intermediates (I; R = H, Me; R1 = Me, group which can be replaced by Me) are cyclized and optionally methylated to give the known azapropazone precursor 3-dimethylamino-7-methyl-1,2,4-benzotriazine-1-oxide (II). 4-Methyl-2-nitroaniline (III) and dimethylacetamide were refluxed in PhMe containing trace H2O and HCl gas was bubbled through the refluxing mixture for 2 h to give 57% I (R = R1 = Me). A yield of 78% was obtained using a 2:1 molar ratio of dimethylacetamide to II.

L5 ANSWER 30 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1987:176254 CAPLUS
DN 106:176254
TI 1,1'-Azobisbenzimidazoles
AU Nanvyan, I. M.; Pozharskii, A. F.; Kuz'menko, V. V.
CS Rostov. Gos. Univ., Rostov-on-Don, 344006, USSR
SO Khimiya Geterotsiklicheskikh Soedinenii (1986), (7), 999-1000
CODEN: KGSSAQ; ISSN: 0453-8234
DT Journal
LA Russian
OS CASREACT 106:176254
GI

/ Structure 17 in file .gra /

AB Oxidation of aminobenzimidazoles I (R = H, Me, Cl, Me2N, MeNH) by Pd(OAc)4 in CH2Cl2 gave 5-58% title compds. II in addition to 7.5% benzotriazine III (R = MeNH). Oxidation of I (R = NH2) gave 80% III.

L5 ANSWER 31 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1986:522778 CAPLUS
DN 105:122778
TI Electrochemical behavior of 2-nitrophenylguanidines in acetonitrile
AU Pazdera, P.; Studnickova, M.; Rackova, I.; Fischer, O.
CS Fac. Sci., J.E. Purkyne Univ., Brno, 611 37, Czech.
SO Journal of Electroanalytical Chemistry and Interfacial Electrochemistry (1986), 207(1-2), 189-202
CODEN: JEIEBC; ISSN: 0022-0728
DT Journal
LA English
AB 4-Methyl-2-nitrophenylguanidine (I) [104235-39-4] is reduced in 2 steps (at -1.30 and -1.51 V vs. SCE (aqueous NaCl) in 0.1 M Et4NBF4 in MeCN. Both reduction steps seem to have a prekinetic character in fast cyclic voltammetry (5-100 V s-1) at a NaCl SCE. The ratio of the polarog. limiting currents is approx. 1:4. The reduction proceeds in an adsorbed state in both steps. Other nitrophenylguanidines (ethylated on the guanidine residue) studied show reduction properties very similar to those of I. The products of the controlled potential electrolysis of I at -1.4 V in MeCN were separated by means of elution chromatog. and characterized by IR and UV-visible spectra. The products of the ring closure of I, i.e. 3-amino-1,2,4-benzotriazine 1,4dioxide [27314-98-3], 3-amino-7-methyl-1,2,4-benzotriazine 1-oxide [27281-74-9] and 3-amino-7-methyl-1,2,4-benzotriazine [27238-39-7] were found to be the components of the reaction mixture along with the products of the elimination of the carbodimide residue from I, i.e. 4-methyl-2-nitroaniline [89-62-3] and the oligomeric organomercury compound yielding melamine [108-78-1] after decomposition The proposed mechanism of ring closure of I involves dipolar addition of the anion of I to I to form a dimer with an N-O-N grouping, cleavage of the N-O bond and cyclization.

L5 ANSWER 32 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1985:6356 CAPLUS
DN 102:6356
TI Synthesis of novel imidazo[1,2-a][3,1]benzothiazines, imidazo[1,2-a][1,2,4]benzotriazines, and 4H-imidazo[2,3-c]pyrido[2,3-e][1,4]oxazines
AU Gauthier, Jean; Duceppe, Jean Simon
CS Dep. Chem., Ayerst Res. Lab., Montreal, QC, H3C 3J1, Can.
SO Journal of Heterocyclic Chemistry (1984), 21(4), 1081-6

CODEN: JHTCAD; ISSN: 0022-152X
DT Journal
LA English
OS CASREACT 102:6356
GI

/ Structure 18 in file .gra /

AB Starting from readily available 2-aminobenzhydrols, 3-amino-1,2,4-benzotriazine and 2-amino-3-pyridinol, novel derivs. of Et 5-phenyl-5H-imidazo[1,2-a][3,1]benzothiazine-2-carboxylate, Et imidazo[2,1-c][1,2,4]benzotriazine-2-carboxylate, and 4H-imidazo[2,3-c]pyrido[2,3-e]oxazine were prepared E.g., treating aminobenzhydrol I with thiourea gave benzothiazine II, which was treated with Et bromopyruvate to give benzothiazolinium bromide III. Refluxing III in EtOH gave imidazobenzothiazine IV.

L5 ANSWER 33 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1982:52337 CAPLUS
DN 96:52337
TI Substituted 3-aminobenzo-1,2,4-triazines
IN Matschiner, Hermann; Thiele, Wolfgang; Schilling, Hans; Tanneberg, Hartmut; Biering, Holger; Kochmann, Werner; Trautner, Kurt; Gallien, Peter; Geidel, Wolfgang
PA Ger. Dem. Rep.
SO Ger. (East), 8 pp.
CODEN: GEXXA8
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DD 149522	Z	19810715	DD 1978-205980	19780614
PRAI	DD 1978-205980		19780614		

OS CASREACT 96:52337
GI

/ Structure 19 in file .gra /

AB I (R = H, C1-4 alkyl, OH, halo, NH2, cyano) were prepared by electrochem. reduction of (2-nitrophenyl)guanidines, formed in situ. Thus, 20 g cyanamide in 20 mL HCl were added dropwise at reflux to 5 g 4,2-Cl(O2N)C6H3NH2 in 20 mL, the mixture was cooled, 150 mL aqueous NH3 were added, and the whole was electrolyzed (graphite anode, Hg cathode, 900 mV) to give 20% II. Also prepared were I (R = H, 5-Cl).

L5 ANSWER 34 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1978:459459 CAPLUS
DN 89:59459
TI Manganese dioxide oxidation of aryl 1,2-diaminoimidazoles
AU Nakajima, Masayuki; Hisada, Ryuki; Anselme, Jean Pierre
CS Dep. Chem., Univ. Massachusetts, Boston, MA, USA
SO Journal of Organic Chemistry (1978), 43(13), 2693-6
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 89:59459

GI

/ Structure 20 in file .gra /

AB The oxidation of aryl-1,2-diaminoimidazoles (I; R = H, Br, MeO) with MnO2 to II and/or III is described. Aroyldiazomethanes, benzonitriles and acetophenones were minor products of this oxidation The formation of II and III from monoaryl imidazoles proceeds the formation of the C-nitrenes (or nitrenoids) which open to the α-hydrazono-N-cyanoimines, followed by cyclization to either II or III. The α-hydrazono-N-cyanoimines also account for the formation of aroyldiazomethanes and benzonitriles while fragmentation of the N-nitrenes explains the presence of the acetophenones. The mechanism of the oxidation of 4,5-diphenyl-1,2-diaminoimidazole and 1,2-diaminobenzimidazole is also discussed.

L5 ANSWER 35 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1978:453474 CAPLUS
DN 89:53474
TI 3-Amino-1,2,4-benzotriazines and their N-oxides as antifolate-antimalarials
AU Parish, W. Wesley; Johnston, William D.
CS Parish Chem. Co., Provo, UT, USA
SO U. S. NTIS, AD Rep. (1976), AD-A050079, 49 pp. Avail.: NTIS From: Gov. Rep. Announce. Index (U. S.) 1978, 78(10), 104
CODEN: XADRCH; ISSN: 0099-8575
DT Report
LA English
AB 3-Amino-7-arylsulfonyl-1,2,4-benzotriazines, their 1-oxides and 1,4-dioxides were synthesized as analogs of the potent 2-4-diamino-6-substituted quinazoline antifolate-antimalarials and evaluated for antimalarial activity.

L5 ANSWER 36 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1977:72584 CAPLUS
DN 86:72584
TI Oxidation of 1,2-diaminobenzimidazoles to 3-amino-1,2,4-benzotriazines
AU Zeiger, Alice V.; Joullie, Madeleine M.
CS Dep. Chem., Univ. Pennsylvania, Philadelphia, PA, USA
SO Journal of Organic Chemistry (1977), 42(3), 542-5
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English
OS CASREACT 86:72584
GI

/ Structure 21 in file .gra /

AB 1,2-Diaminobenzimidazoles I (R = H, R1 = F3C, Cl, Me) were synthesized via the cyclization of o-acylhydrazidoanilines with BrCN. A facile route to I (R = R1 = H, Me) was also devised using the corresponding 2-aminobenzimidazoles and H2NOSO3H as the aminating agent. Schiff bases of I (R = R1 = NH2) were also prepared The reaction of I (R = R1 = H) with benzil provided 2,3-diphenyl-as-triazino[2,3-a]benzimidazole. Oxidation of the 1,2-diaminobenzimidazoles with Pb(OAc)4 afforded 3-amino-1,2,4-benzotriazines II.

L5 ANSWER 37 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1977:16641 CAPLUS
DN 86:16641

10/528,090

TI A convenient synthesis of 1,2-diaminobenzimidazoles and their oxidation to 3-amino-1,2,4-benzotriazines
AU Zeiger, Alice V.; Joullie, Madeleine M.
CS Dep. Chem., Univ. Pennsylvania, Philadelphia, PA, USA
SO Synthetic Communications (1976), 6(6), 457-60
CODEN: SYNCAV; ISSN: 0039-7911
DT Journal
LA English
OS CASREACT 86:16641
GI

/ Structure 22 in file .gra /

AB Benzotriazines I (R = H, R1 = H, Me, CF3, Cl; R = R1 = Me) were prepared in 48-95% yield by aminating benzimidazoles II (R2 = H) with H2NOSO3H and treating II (R2 = NH2) with Pb(OAc)4.

L5 ANSWER 38 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1976:90119 CAPLUS
DN 84:90119
TI Synthesis of 3-aminobenzo-1,2,4-triazine 4-oxides
AU Belyaev, E. Yu.; Gornostaev, L. M.; Levdanskii, V. A.
CS Sib. Tekhnol. Inst., Krasnoyarsk, USSR
SO Khimiya Geterotsiklicheskikh Soedinenii (1975), (11), 1571-2
CODEN: KGSSAQ; ISSN: 0132-6244
DT Journal
LA Russian
GI For diagram(s), see printed CA Issue.
AB Benzotriazine oxides (I, R = H, R1 R1 = Cl, Br, Me; R = Me, R1 = Cl, Br) were obtained in 73-92% yields by treatment of H2NC(:NH)NHNH2.HNO3 with the corresponding o-H2NC6H4OH derivs. in aqueous alc. containing 56% HNO3 100 hr
at room temperature

L5 ANSWER 39 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1974:505578 CAPLUS
DN 81:105578
TI Microbicidal 3-amino-1,2,4-benzotriazine di-N-oxides
IN Seng, Florin; Ley, Kurt; Hamburger, Brigitte; Bechlars, Franz
PA Bayer A.-G.
SO Ger. Offen., 27 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2255825	A1	19740516	DE 1972-2255825	19721115
	DE 2255825	B2	19770728		
	NL 7315460	A	19740517	NL 1973-15460	19731112
	JP 49080246	A2	19740802	JP 1973-126369	19731112
	CA 1001946	A1	19761221	CA 1973-185679	19731113
	BE 807306	A1	19740514	BE 1973-137734	19731114
	CH 563716	A	19750715	CH 1973-15998	19731114
	ES 420538	A1	19760416	ES 1973-420538	19731114
	FR 2206105	A1	19740607	FR 1973-40764	19731115
	GB 1438179	A	19760603	GB 1973-53044	19731115
	US 3991189	A	19761109	US 1975-599697	19750728
PRAI	DE 1972-2255825		19721115		
	US 1973-409543		19731025		

GI For diagram(s), see printed CA Issue.

AB Eight benzotriazine dioxides I (R = Me, Ac, COEt, COCH2COMe, Bz, COC17H35-n, CONHMe, and cyclo-hexylaminocarbonyl) were prepared by alkylation of I (R = H) with e.g. Me2SO4 and KOH or acylation with e.g. Ac2O, diketene, BzCl, or MeNCO. I (R ≠ H) had bactericidal, fungicidal, and algicidal effects and were useful as preservative for paints, disinfectant for circulating cooling water, and microbicidal finishing of textiles.

L5 ANSWER 40 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1974:465225 CAPLUS
DN 81:65225
TI 1,2,4-Benzotriazinium dyes
IN Leverenz, Klaus; Schuendehuette, Karl H.
PA Bayer A.-G.
SO Ger. Offen., 37 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2241259	A1	19740228	DE 1972-2241259	19720822
	DE 2241259	B2	19791018		
	DE 2241259	C3	19800703		
	BE 803783	A1	19740220	BE 1973-134731	19730820
	NL 7311455	A	19740226	NL 1973-11455	19730820
	JP 49053916	A2	19740525	JP 1973-92564	19730820
	IT 990378	A	19750620	IT 1973-52074	19730820
	GB 1384223	A	19750219	GB 1973-39482	19730821
	CH 7312022	A4	19750731	CH 1973-12022	19730821
	CH 572544	B	19760213		
	FR 2197047	A1	19740322	FR 1973-30454	19730822
	US 3919214	A	19751111	US 1973-390374	19730822
PRAI	DE 1972-2241259		19720822		

AB 1,2,4-Benzotriazinium dyes (I, R = substituted phenyl, dibenzofuranyl,benzothiazolyl, carbazolyl, R1 = H, Me, Ph, EtO, NH2; R2 = H,MeO, Cl; R3 = H, Et, Bu, PhCH2, CH2CH2CN, CH2CH2OH, cyclohexyl, Ph; R4 = H, Et, Bu, Me; X = Cl, BF4, ClO4,ZnCl3) were prepared by cyclization of azo dyes II in the presence of acids, acid halides or amine salts, and dyed acrylic and acid-modified polyamide and polyester fiber fast yellow to red shades. Thus, azo dye II (R = p-MeOC6H4, R1 = R2 = H, R3 = R4= Et) was stirred in HCO2H for 1 hr and HClO4 was added to give red benzotriazinium dye (I, R = p-MeOC6H4, R1 = R2 = H, R3 = R4 = Et, X = ClO4) [51962-62-0].

L5 ANSWER 41 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1974:463690 CAPLUS
DN 81:63690
TI Antimicrobial (1,4-dioxo-1,2,4-benzotriazin-3-yl)ureas
IN Seng, Florin; Ley, Kurt; Metzger, Karl G.
PA Bayer A.-G.
SO Ger. Offen., 26 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2255946	A1	19740522	DE 1972-2255946	19721115
	IN 138850	A	19760403	IN 1973-CA2331	19731019
	US 3957779	A	19760518	US 1973-413887	19731108
	NL 7315455	A	19740517	NL 1973-15455	19731112
	JP 49080084	A2	19740802	JP 1973-126876	19731113
	JP 49080217	A2	19740802	JP 1973-126877	19731113

	AU 7362429	A1	19750515	AU 1973-62429	19731113
	SU 479285	D	19750730	SU 1973-1967997	19731113
	PL 87630	P	19760731	PL 1973-166511	19731113
	CH 586213	A	19770331	CH 1973-15941	19731113
	BE 807308	A1	19740514	BE 1973-137736	19731114
	ZA 7308730	A	19740925	ZA 1973-8730	19731114
	ES 420537	A1	19760401	ES 1973-420537	19731114
	DK 133985	B	19760823	DK 1973-6157	19731114
	HU 168894	P	19760828	HU 1973-BA2996	19731114
	SE 394815	B	19770711	SE 1973-15439	19731114
	CS 177870	P	19770831	CS 1973-7820	19731114
	FR 2206103	A1	19740607	FR 1973-40748	19731115
	AT 7309613	A	19751015	AT 1973-9613	19731115
	AT 330793	B	19760726		
	GB 1438180	A	19760603	GB 1973-53069	19731115
	US 4027022	A	19770531	US 1975-602109	19750805
	IN 140109	A	19760918	IN 1975-CA1809	19750922
PRAI	DE 1972-2255946		19721115		
	DE 1972-2255947		19721115		
	IN 1973-CA2331		19731019		
	US 1973-413887		19731108		

GI For diagram(s), see printed CA Issue.

AB Nine benzotriazinylureas I (R1 = H or Me; R2 = H, Me, or Et; or NR1R2 = 1-pyrrolidinyl, piperidino, or morpholino) were prepared by reaction of the oxa-diazolobenzotriazine II with R1R2NH. II was prepared by reaction of benzofuroxan with Na2NCN and phosgenation of the resulting III. I had antimicrobial activity and were useful as growth-promoting feed additives.

L5 ANSWER 42 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1973:515636 CAPLUS
DN 79:115636
TI Antimicrobial 3-amino-1,2,4-benzotriazine 1,4-dioxides
IN Ley, Kurt; Seng, Florian; Vletzger, Karl G.
PA Bayer A.-G.
SO Ger. Offen., 23 pp.
CODEN: GWXXBX
DT Patent
LA German
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2204574	A1	19730809	DE 1972-2204574	19720201
	RO 62861	P	19771115	RO 1973-73521	19730117
	US 3868371	A	19750225	US 1973-326389	19730124
	CA 981265	A1	19760106	CA 1973-162047	19730125
	NL 7301245	A	19730803	NL 1973-1245	19730129
	JP 48081881	A2	19731101	JP 1973-11240	19730129
	JP 48082017	A2	19731102	JP 1973-11241	19730129
	BE 794742	A1	19730730	BE 1973-127056	19730130
	AT 322559	B	19750526	AT 1973-805	19730130
	CH 576458	A	19760615	CH 1973-1290	19730130
	ZA 7300702	A	19731031	ZA 1973-702	19730131
	DD 103897	C	19740212	DD 1973-168604	19730131
	AU 7351620	A1	19740801	AU 1973-51620	19730131
	GB 1373324	A	19741113	GB 1973-4853	19730131
	PL 79604	P	19750630	PL 1973-160492	19730131
	DK 132408	B	19751201	DK 1973-533	19730131
	ES 411154	A1	19760316	ES 1973-411154	19730131
	NO 136096	B	19770412	NO 1973-400	19730131
	SE 393612	B	19770516	SE 1973-1341	19730131
	FR 2181701	A1	19731207	FR 1973-3557	19730201
	HU 165299	P	19740828	HU 1973-BA2859	19730201
	SU 447888	D	19741025	SU 1973-1895801	19730201

	SU 505329	D	19760228	SU 1973-1979322	19730201
	US 3980779	A	19760914	US 1974-465165	19740429
	AT 7404730	A	19770115	AT 1974-4730	19740607
	AT 339129	B	19771010		
	DK 136693	B	19771114	DK 1974-3923	19740719
	US 4001410	A	19770104	US 1975-584910	19750609
	FI 7701838	A	19770610	FI 1977-1838	19770610
PRAI	DE 1972-2204574		19720201		
	US 1973-326389		19730124		
	AT 1973-805		19730130		
	FI 1973-260		19730130		
	DK 1973-533		19730131		
	US 1974-465165		19740429		

GI For diagram(s), see printed CA Issue.

AB The benzotriazines (I; R = H, Cl, Me, MeO, or EtO; isomer mixts. with x = 6 and 7) were prepared by reaction of II with Na2NCN. Three I were used in vitro and in vivo as antimicrobial agents. Thus, reaction of II (R = H) with Na2NCN in MeOH-H2O 40 min at 60° gave 89% I (R = H).

L5 ANSWER 43 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1973:43435 CAPLUS
DN 78:43435
TI Simple synthesis of 3-amino-1,2,4-benzotriazine 1,4-dioxide
AU Seng, Florin; Ley, Kurt
CS Wiss. Hauptlab., Farbenfabr. Bayer A.-G., Leverkusen, Fed. Rep. Ger.
SO Angewandte Chemie, International Edition in English (1972), 11(11), 1009-10
CODEN: ACIEAY; ISSN: 0570-0833
DT Journal
LA English
GI For diagram(s), see printed CA Issue.
AB The title compound (I, R = H) (II) was prepared by addition of Na2NCN to benzofuroxan followed by acidification of the resulting Na salt (III). Thus, benzofuroxan suspended in 50% aqueous MeOH was treated with 3 equivs. Na2NCN 25 min to give III, which was acidified with HOAc to give 81% II. COCl2 was added to II in PhMe at 90° to give 84% IV identified by its reaction with MeNH2 to give the urea (I, R = CONHMe), which was also obtained by reaction of II with MeNCO.

L5 ANSWER 44 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1970:435336 CAPLUS
DN 73:35336
TI Heterocyclic N-oxides. VI. Synthesis and nuclear magnetic resonance spectra of 3-aminobenzo-1,2-4-triazines and their mono- and di-N-oxides
AU Mason, J. C.; Tennant, G.
CS Dep. Chem., Univ. Edinburgh, Edinburgh, UK
SO Journal of the Chemical Society [Section] B: Physical Organic (1970), (5), 911-16
CODEN: JCSPAC; ISSN: 0045-6470
DT Journal
LA English
AB A series of 3-aminobenzo-1,2,4-triazine derivs. were prepared and their oxidation with H2O2 in AcOH studied. The position of the N-oxide group(s) in the products was established by NMR anal. Oxidation of 3-aminobenzo-1,2,4-triazines at room temperature gave almost exclusively the 2-oxide, whereas prolonged oxidation at 50° gave the 1,4-di-N-oxide.

L5 ANSWER 45 OF 45 CAPLUS COPYRIGHT 2004 ACS on STN
AN 1968:496677 CAPLUS
DN 69:96677
TI Analogs of 3-amino-7-chloro-1,2,4-benzotriazine 1-oxide as antimalarial agents
AU Horner, J. Kenneth; Henry, David W.

10/528,090

CS Dep. of Pharm. Chem., Stanford Res. Inst., Menlo Park, CA, USA
SO Journal of Medicinal Chemistry (1968), 11(5), 946-9
CODEN: JMCMAR; ISSN: 0022-2623
DT Journal
LA English
GI For diagram(s), see printed CA Issue.
AB A series of substituted 1,2,4-benzotriazines, quinazolines, quinoxalines, quinolines, and other related heterocycles were prepared for evaluation as antimalarial agents. Substituent patterns were chosen to provide maximum steric resemblance to 3-amino-7-chloro-1,2,4-benzotriazine 1-oxide (I), a known antimalarial. Slight favorable effects against exptl. Plasmodium berghei infections in mice were noted, but significant activity was not encountered. When assayed in vitro, five of the compds. were inhibitory to a series of eight other microorganisms.

=> log y

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DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)	SINCE FILE ENTRY	TOTAL SESSION
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